How to / Trackmania / Modifying environments

Author : Tamonte & Firefly (Translations: NicoG60 , MindXperience , tramantana)

PAGE 1 2 NEXT PAGE

Table of contents
Examples
Part 1: Preperations
→ Nadeo's "Default Mod"
→ Structure of the .zip archive
→ Working with temporary files
Part 2: Working on "Image Files"
→ DNS textures
→ Creating a diffuse map
→ Creating a normal map
→ Creating a specular map
Part 3: Working on "Mood Files"
→ Sky
→ Sunlight
→ Clouds Part 1
→ Clouds Part 2
→ Reflections
Part 4: Representation in TM
→ Loadscreen
→ Icon
Part 5: Finishing your work
Part 6: Workflow

Introduction

3 facts about Mods

→ An Environment Modification (called "Mod") is a .zip archive file, containing modified texture graphics, which determine the looks of the Environment in which you play.

→ When a Mod is beeing loaded, Trackmania will replace its default textures, as long as the .zip file contains a specific modified texture.
All other textures will be the default ones.

→ To assign a Mod to a driving track:
While chosing which track to open for the Track editor, hold the CTRL button and then click your track.
A window appears, listing the mods which are installed.

ATTENTION !
In Trackmania Forever, lots of DDS textures have changed. Most of the new DDS textures are compressed with DXT1 format, either with/without alpha channel.

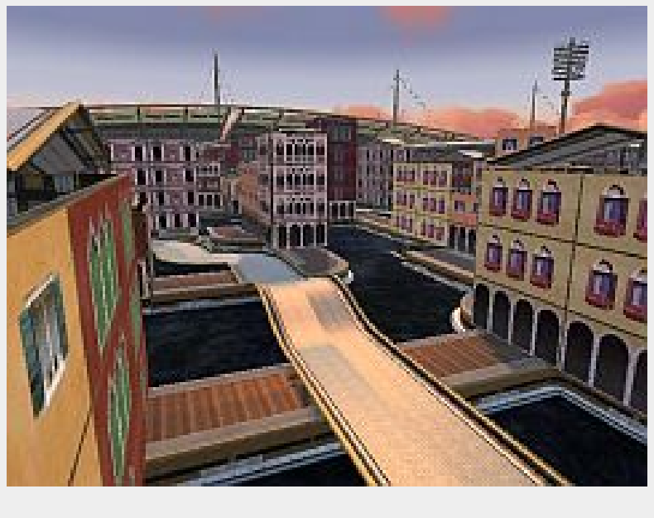
Download our Mania Creative STADIUM MOD
This Mod can be used as a specimen example for the zip's structure and content.

I assume you're familiar with creating/editing .dds texture files.
I assume you're also familiar with file locations.

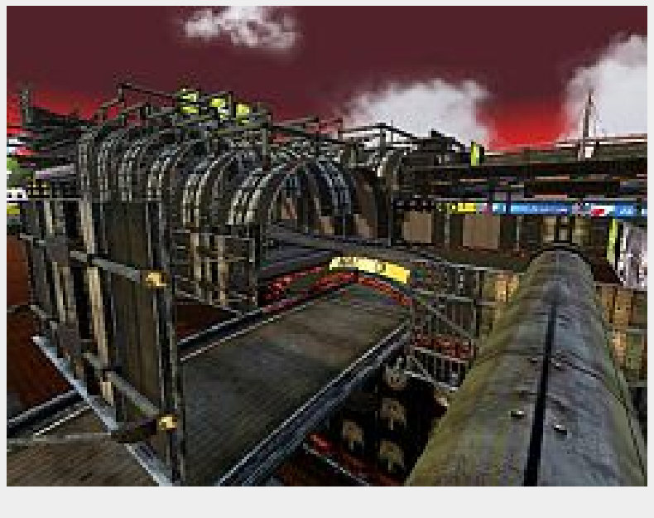
Examples

Some examples of how mods can make the Stadium environment look like...

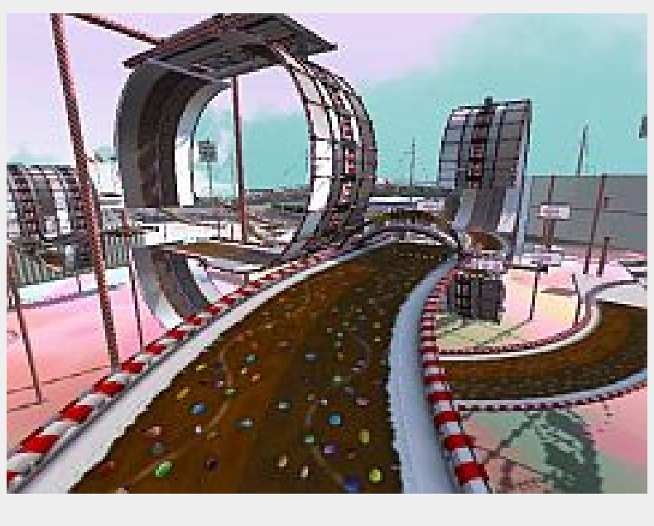
"Venice Challenge"



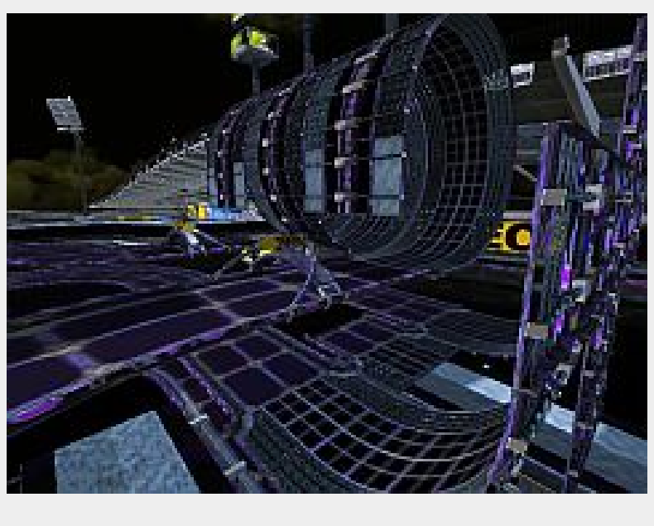
"Fallen Angel"



"Sweet Dreams"



"Tron"



Part 1: Preparations

Nadeo's default Mod

Of course all textures which are loaded into the game must already exist on the harddisk.
Look up the detailed file locations for the environment textures you want to modify. In these harddisk folders you will find all the original textures.

Which texture does what ?

Every Trackmania environment has lots of textures... when browsing the texture folders, you will recognise a lot of these textures from the gameplay and often enough, the filename of the texture tells you what it's used for...

But to understand the purpose of every single texture, it will take lots of practice on environment modding.
You'll understand that we can only introduce a few examples of the Stadium environment, learning all the rest is up to you...

Which texture is compressed with which DXT settings ?

You should always save your modified texture with the same format settings as the original texture. Basically you have 2 possibilities to do that:

1) For lazy people: Try to save your new texture with different settings. The result file with the same file size as the original will have the right settings ;-)
2) For clever people: Let your favorite image viewer / graphic program show you the properties of the original texture file (DXT 1a,1c,3,5, mipmaps yes/no, alpha channel etc...) and use the same settings when saving your own file :-)

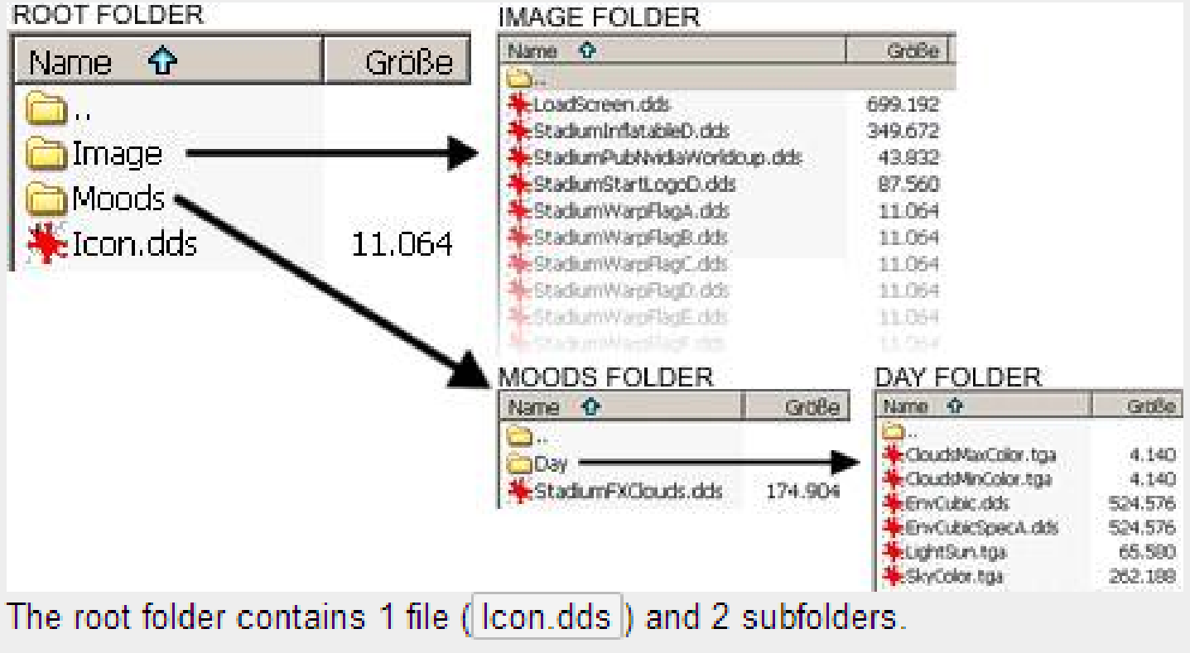
Needless to say

Just leave these files unchanged and where they are to keep the game's original look intact.

Structure of the .zip archive

The non-default mods are always integrated via a .zip archive file. Trackmania will automatically read all necessary files from the zip archive and integrate them into the gameplay.

Open up our Mania Creative STADIUM MOD zip file to view it's structure...



ROOT FOLDER

Name	Größe
..	
Image	
Moods	
Icon.dds	11.064

IMAGE FOLDER

Name	Größe
..	
LoadScreen.dds	699.192
StadiumInflatableD.dds	349.672
StadiumPubNvidiaWorldcup.dds	43.832
StadiumStartLogoD.dds	87.560
StadiumWarpFlagA.dds	11.064
StadiumWarpFlagB.dds	11.064
StadiumWarpFlagC.dds	11.064
StadiumWarpFlagD.dds	11.064
StadiumWarpFlagE.dds	11.064

MOODS FOLDER

Name	Größe
..	
Day	
StadiumFXClouds.dds	174.904

DAY FOLDER

Name	Größe
..	
CloudsMaxColor.tga	4.140
CloudsMinColor.tga	4.140
EnvCubic.dds	524.576
EnvCubicSpecA.dds	524.576
LightSun.tga	65.580
SkyColor.tga	262.188

The root folder contains 1 file (Icon.dds) and 2 subfolders.
→ "Image" contains textures for all trackworks parts (road,grass,roofparts etc...)
→ "Moods" contains textures for your environment (day/night/...)
→ "Day" contains textures for your daytime environment (sky,clouds,etc...)

Case sensitive
You're well advised to handle the directories filenames and folders case sensitive (upper/lowercase letters should remain as they originally are)...

Working with temporary files

This procedure is good for people who are completely unexperienced in environmental modding, but it will provide a good overview of the stuff you're working on:

1) I'd suggest you create c:\temp\ , this shall be the "root folder" for your Mod...

2) Now go to your chosen[Environment]\Media\ folder and look out for the "Moods" and "Texture" folders...

3) Copy the "Moods" folders to c:\temp\

4) Go into the "Texture" folder and copy the "Images" folder toc:\temp\ . Don't copy the "Texture" folder itself, this won't work later on.

You have all default textures of your chosen environment copied to c:\temp\ ... Now you can start to work on specific textures you want to be modified...

Cleaning up the mess

Later on, after we edited all textures we wanted, we will clean up the mess and delete all files we didn't modify, so don't worry about the masses of temporary files ;-)

Part 2: Working on the "Image" files

The files in this folder define the textures used on all the game blocks.
For some block parts, there are 3 different textures... "DNS textures"

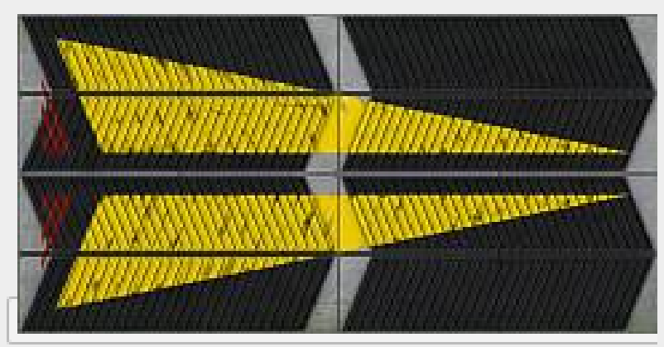
Diffuse Maps

Diffuse map (end with letter D)

Diffuse is the map that shows how the texture will look in reality, with no special effects applied..

Save it in DDS format with DXT1

StadiumRoadTurboD.dds



CLICK IMAGE TO ZOOM

PC0/1 (graphic settings) only uses the Diffuse map.

Specular Maps

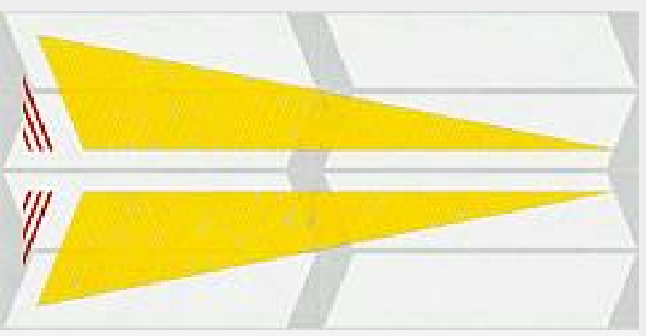
Specular map (end with letter S)
Specular map tells where the texture should shine, and in what colour.

In the alpha/transparency channel you set how much it will shine;

0% transparency = shiny
100% transparency = matte

The image looks like the Diffuse texure, but a lot brighter.

StadiumRoadTurboS.dds



CLICK IMAGE TO ZOOM

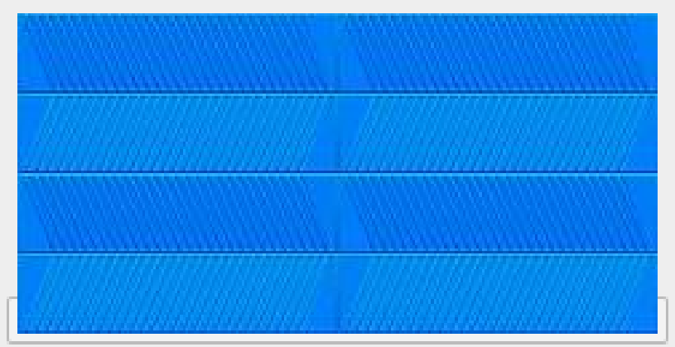
PC2 (graphic settings) uses Diffuse & Specular maps.

Normal Maps

Normal map (end with letter N)

"Normal maps" are commonly used to apply "depth" to a diffuse map.

StadiumRoadTurboN.dds



CLICK IMAGE TO ZOOM

But how to generate such a map ? There are several methods, but after all, they all do the same:
They create a "Relief" effect with the color (128/128/255) as the surface color. Every graphics program can apply this effect.

A "normal map" in nadeo is just a little different. In addition to the relief effect, all "red" elements are removed out of the RGB range of the picture, only green and blue remain...

PC3 (graphic settings) uses diffuse,specular and normal maps.

Creating our own Diffuse Map

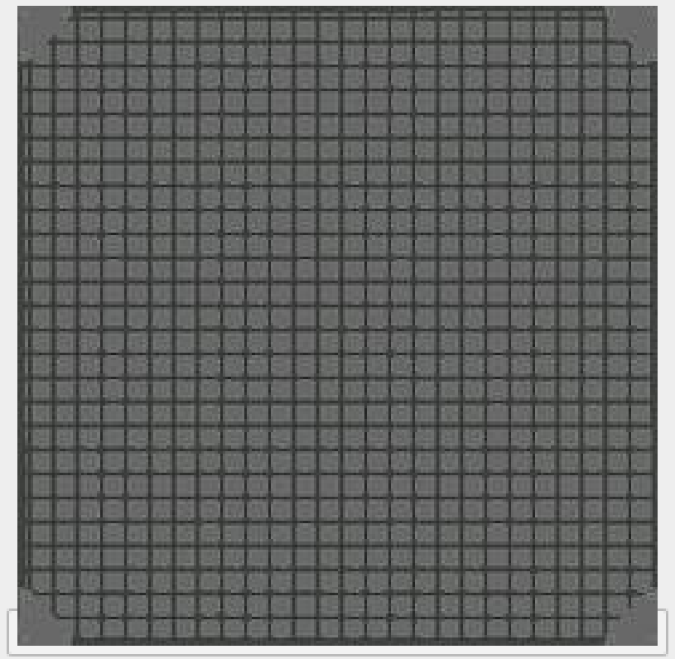
Source : StadiumInflatable2D.dds (512x512 pixel)

Surely you'll recognise this texture: it's the ugly grey floor on top of the inflatables, we want to create something nicer...

Note that StadiumInflatable has a 512x512 resolution so you should get/make a texture with minimum 512x512 to avoid losing quality.

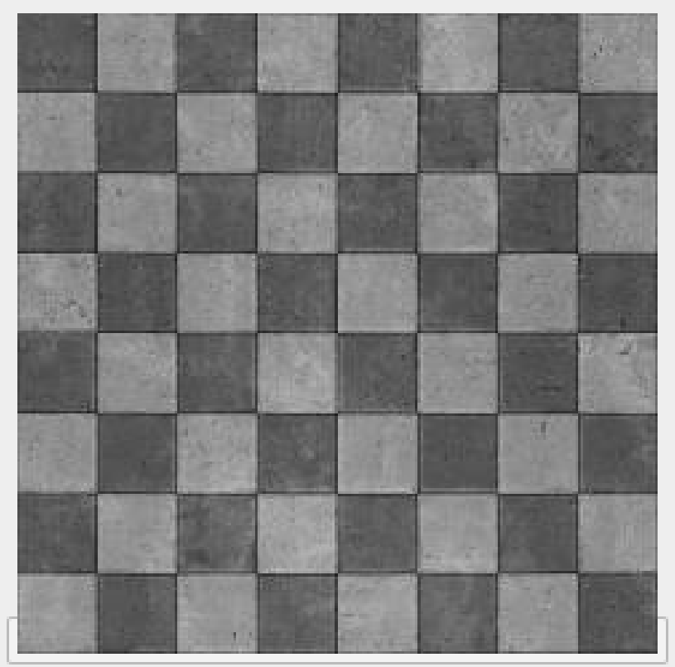
As most textures in TM, it's a "tiled image", which means it will be repeated next to itself, left/right, above/below when put on objects... so make sure the borders to all sides fit the opposite side...

Original Texture



CLICK IMAGE TO ZOOM

New Texture



CLICK IMAGE TO ZOOM

Creating our own Normal Map

Source : StadiumInflatable2N.dds (512x512 pixel)
This is the map that makes the texture look much more realistic giving it some relief.
It's not really easy to create this map properly...

With Adobe Photoshop

1) Apply the "NormalMapFilter" (NVidia's Photoshop plugins) to your diffuse map picture.

2) The only value to be edited is the "Scale", it will set the "height" of the relief.

3) Click OK and you've already created your normal map.

4) Eliminate all red elements out of the picture: Set your background Color to Black, Select the whole picture (only in "Red channel") with the Marquee tool and press DEL. Take a look at the RGB channel to check the result.

5) Additionally, you might want to smooth your picture a lot, so the surface doesn't get too crumbly.

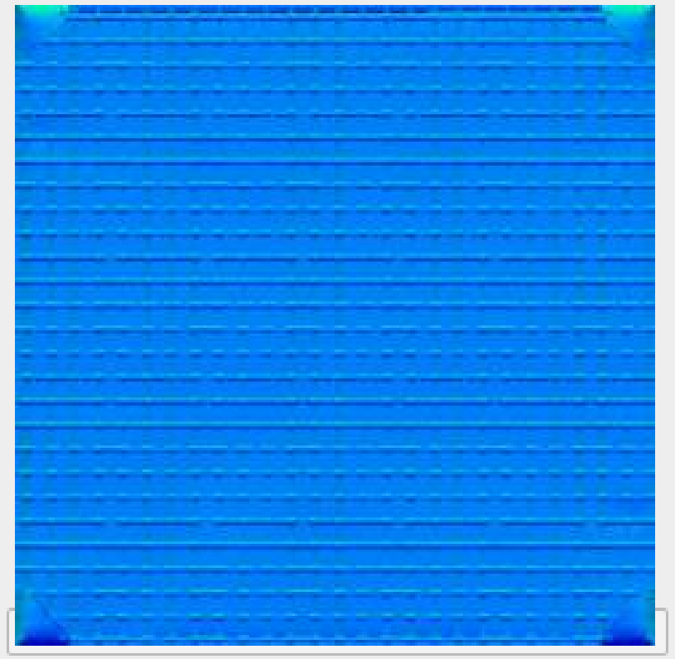
With Corel Photopaint / other paint programs

1) Apply "3D Relief" effect to your diffuse map picture, options: Surface color RGB (128/128/255), chose Depth & Intensity after your taste.

2) Apply the Color channel mixer to remove all red elements out of the picture. The results should look similar to the ones below.

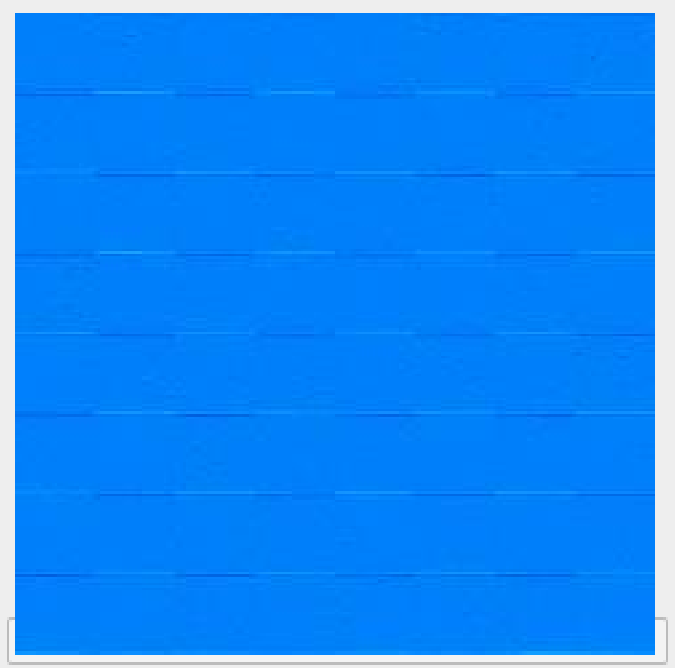
3) Additionally, you might want to smooth your picture a lot, so the surface doesn't get too crumbly.

Original Texture



CLICK IMAGE TO ZOOM

New Texture



CLICK IMAGE TO ZOOM

Save your picture as dds, options: DXT5, no alpha channel.

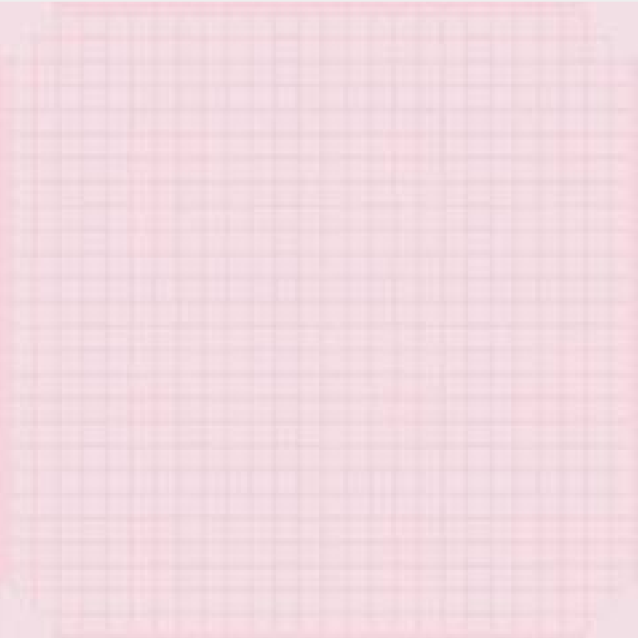
Creating our own Specular Map

Source StadiumInflatable2S.dds (512x512 pixel)

Specular map tells where the texture should shine, and in what colour.

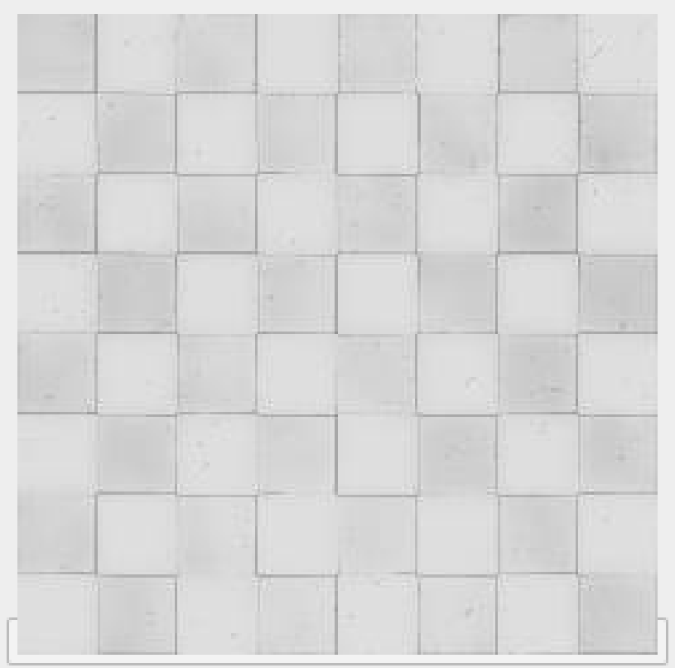
1) Apply a brightness +80% / contrast +50% to your diffuse texture picture. This will show the shine color...
2) Select background color "black", then apply a 30% transparancy/alpha to your picture. Results should look similar to the pictures below...
3) If you can't directly save the file as DDS (DXT5 compression, with transparency), then export the picture to .PNG with transparency and convert to .DDS afterwards (e.g. with DDS Converter 2.1 or nvDXT)

Original Texture



CLICK IMAGE TO ZOOM

New Texture



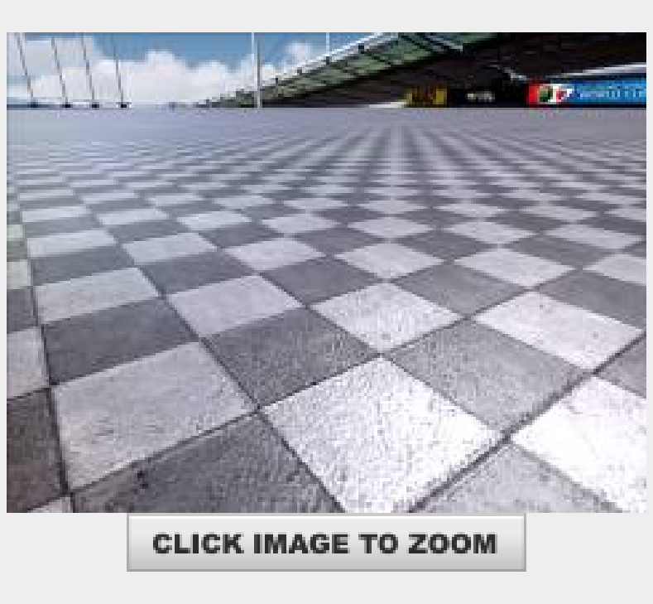
CLICK IMAGE TO ZOOM

Viewing the result

The inflatable surface will now use these 3 textures to deliver some 3-dimensional impression of the surface...

It takes some time indeed to work on all 3 textures, but a real quality Mod should follow this path.

Don't be too lazy, after all Environment modding is quite a piece of work !



CLICK IMAGE TO ZOOM

PAGE 1 2 NEXT PAGE

Trackmania, Shootmania, Questmania games & media © Nadeo & UbiSoft used under fair use policy
8,373,433 page views since January 2008. All tutorials, services, coding © Mania Creative 2008-2013